

Title (en)

LIGHT EMISSION SYSTEM WITH MICROLED DEVICE ISOLATION

Title (de)

LICHTEMISSIONSSYSTEM MIT MIKROLED-VORRICHTUNGSISOLIERUNG

Title (fr)

SYSTÈME D'ÉMISSION DE LUMIÈRE AVEC ISOLATION DE DISPOSITIF À MICRODEL

Publication

EP 4278385 A1 20231122 (EN)

Application

EP 22740135 A 20220114

Priority

- US 202163137355 P 20210114
- US 2022012493 W 20220114

Abstract (en)

[origin: WO2022155455A1] A light emission system includes an array of micro light-emitting diodes (microLED)s. The array of microLEDs includes a semiconductor substrate, a prep layer formed on at least a portion of the semiconductor substrate, and an active region formed on the prep layer. The array of microLEDs also include a plurality of thick sub-structures forming an array on the active region, and a plurality of thin sub-structures formed on the active region, each one of the thin sub-structures being located between each adjacent pair of thick substructures. Each one of the thick sub-structures defines a shape and size of a corresponding one of the microLEDs. Each one of the thin sub-structures is configured for preventing mobility of free electron carriers therethrough to electrically isolate each one of the thick sub-structures from every other one of the thick sub-structures. Further, the plurality of microLEDs share the active region.

IPC 8 full level

H01L 27/15 (2006.01); **G02F 1/017** (2006.01); **G09G 3/32** (2016.01); **G09G 3/3225** (2016.01); **H01S 5/34** (2006.01)

CPC (source: EP KR US)

G02F 1/017 (2013.01 - EP KR); **H01L 25/0753** (2013.01 - US); **H01L 27/156** (2013.01 - EP KR); **H01L 33/005** (2013.01 - US); **H01L 33/06** (2013.01 - KR); **H01L 33/145** (2013.01 - KR US); **H01L 33/20** (2013.01 - KR); **H01L 33/32** (2013.01 - KR US); **H01L 33/502** (2013.01 - US); **H01L 33/06** (2013.01 - EP); **H01L 33/20** (2013.01 - EP); **H01L 2933/0008** (2013.01 - KR); **H01L 2933/0041** (2013.01 - US)

Citation (search report)

See references of WO 2022155455A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

WO 2022155455 A1 20220721; CN 117378106 A 20240109; EP 4278385 A1 20231122; JP 2024505419 A 20240206; KR 20230125835 A 20230829; TW 202249271 A 20221216; US 2022254759 A1 20220811

DOCDB simple family (application)

US 2022012493 W 20220114; CN 202280009752 A 20220114; EP 22740135 A 20220114; JP 2023542745 A 20220114; KR 20237026343 A 20220114; TW 111101671 A 20220114; US 202217576300 A 20220114